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Project No. 2004-146

MINIATURE RECORDER CB-3 AND PLAYBACK UNIT CB-4

(ENGINEERING MODEL)

[redacted] STAT

1. The CB-3 Miniature Data Recorder and CB-4 Playback Unit were manufactured by the [redacted] STAT [redacted] STAT Both units were evaluated to determine if they met specifications No. 57-A-1059-A.

2. The original evaluation indicated such poor results that [redacted] STAT sent two engineers to adjust the equipment. Upon completion of their work, the items listed failed to meet specifications:

CB-3

a. Input impedance
b. Dynamic range
c. Frequency response
d. Battery life (motor)
e. Satisfactory operation from internal batteries
f. Input connectors
g. Size

In addition, the following undesirable characteristics were noted:

a. Low output
b. Excessive start and stop time
c. Range of internal microphone is only 3 feet
d. Reference oscillator and amplifiers require approximately 45 seconds to operate at -30 deg C.
e. Tape attachment and removal to and from the tape cartridge are difficult.
f. Tape pressure pad position is critical
g. Motor does not maintain even recording speed
h. Motor will not operate at -30 deg C.
i. Battery replacement is difficult because of the small screws securing the battery case cover.

3. The CB-4, after rework, apparently met specifications with one exception: monitor output impedance.

A number of undesirable characteristics were noted:

a. A 10 kc oscillation appeared in the output when the playback amplifier gain was maximum.

b. Excessive "over-run" was found in the rewind condition.

c. The tape broke occasionally when changing modes of operation.

d. The tape feed indicator on the transport panel did not function properly.

e. Belt replacement of the "O" ring type could not be accomplished without difficulty.

f. The placement and shielding of the cables to the input of the playback amplifiers are critical to avoid self-oscillation.

g. The braking system is intermittent.

h. The tape speed adjustment is difficult.

i. The control switches are weak structurally and inconveniently placed.

4. Because of the deficiencies listed above it is believed that excessive redesign will be necessary to make these equipments useable for their intended purpose. It is recommended that no further work be done on this equipment.